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10/736,815	12/16/2003	Ralph Gholmieh	4740-235	5396	
	24112 7590 06/07/2007 COATS & BENNETT, PLLC			EXAMINER .	
1400 Crescent Green, Suite 300			SAFAIPOUR, BOBBAK		
Cary, NC 27518			ART UNIT	PAPER NUMBER	
			2618	1 	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)			
	10/736,815	GHOLMIEH ET AL.			
Office Action Summary	Examiner	Art Unit			
	Bobbak Safaipour	2618			
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply					
A SHORTENED STATUTORY PERIOD FOR REPL WHICHEVER IS LONGER, FROM THE MAILING D - Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period - Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailin earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION (36(a). In no event, however, may a reply be time will apply and will expire SIX (6) MONTHS from a cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).			
Status					
1)⊠ Responsive to communication(s) filed on <u>06 №</u> 2a)□ This action is FINAL . 2b)⊠ This 3)□ Since this application is in condition for allowal closed in accordance with the practice under №	action is non-final.				
Disposition of Claims					
4) Claim(s) 1-32 is/are pending in the application 4a) Of the above claim(s) is/are withdra 5) Claim(s) is/are allowed. 6) Claim(s) 1-32 is/are rejected. 7) Claim(s) is/are objected to. 8) Claim(s) are subject to restriction and/o	wn from consideration.				
Application Papers					
9) ☐ The specification is objected to by the Examine 10) ☑ The drawing(s) filed on 12/16/2003 is/are: a) ☐ Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct 11) ☐ The oath or declaration is objected to by the Example 11.	accepted or b) objected to by drawing(s) be held in abeyance. See tion is required if the drawing(s) is object.	e 37 CFR 1.85(a). jected to. See 37 CFR 1.121(d).			
Priority under 35 U.S.C. § 119					
 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. 					
Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date	4) Interview Summary Paper No(s)/Mail Da 5) Notice of Informal P 6) Other:	ate			

Art Unit: 2618

DETAILED ACTION

Response to Arguments

Applicant's arguments, see pages 2-6, filed 3/6/2007 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Corazza (US 6,563,810 B1) in view of Gopalakrishnan et al (US 6,859,446 B1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

- 1. Determining the scope and contents of the prior art.
- 2. Ascertaining the differences between the prior art and the claims at issue.
- 3. Resolving the level of ordinary skill in the pertinent art.
- 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

Art Unit: 2618

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corazza (US 6,563,810 B1) in view of Gopalakrishnan et al (US 6,859,446 B1).

Consider claim 1, Corazza discloses a method of tracking mobile station power headroom at a wireless communication network base station comprising: receiving a power headroom report from a mobile station (abstract; col. 3, lines 30-41; col. 4, lines 12-16; Transmit power headroom is exchanged between the network and the subscribers) and updating the headroom value to track changes in a transmit power of the mobile station based on reverse link power control information associated with the mobile station (abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18; Each subscriber station selects a data rate based on the amount of data queued for transmission and adjusts this rate based on the available power headroom).

Corazza fails to specifically disclose storing a headroom value for the mobile station based on the power headroom report received from the mobile station.

In related art, Gopalakrishnan et al disclose storing a headroom value for the mobile station based on the power headroom (abstract; read as available transmit power) report received from the mobile station. (abstract; figure 2; col. 5, 10-42; col. 6, lines 54-

Art Unit: 2618

67; The data rate is transmitted to the base station (step 150 of figure 1) wherein the base station schedules time-slotted data transmissions to mobile-telephones (step 160 of figure 2; read as storing a headroom value) capable of receiving data at higher rates before mobile-telephones capable of receiving data at lower data rates. The data is then transmitted (step 170 of figure 2))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Gopalakrishnan et al into the teachings of Corazza to integrate voice and data services onto a same frequency channel using available transmit power information to determine data rates.

Consider claim 11, Corazza discloses a method of tracking mobile station power headroom at a wireless communication network base station comprising: periodically receiving a full report from a mobile station that indicates a transmit power headroom of the mobile station (abstract; col. 3, lines 30-41; col. 4, lines 12-16; Transmit power headroom is exchanged between the network and the subscribers) and tracking changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station (abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18; Each subscriber station selects a data rate based on the amount of data queued for transmission and adjusts this rate based on the available power headroom).

Corazza fails to specifically disclose updating a headroom value maintained at the base station for the mobile station responsive to receiving each full report.

Art Unit: 2618

In related art, Gopalakrishnan et al disclose updating a headroom value (abstract;

read as available transmit power) maintained at the base station for the mobile station

responsive to receiving each full report. (abstract; figure 2; col. 5, 10-42; col. 6, lines 54-

67; The data rate is transmitted to the base station (step 150 of figure 1) wherein the base

station schedules time-slotted data transmissions to mobile-telephones (step 160 of figure

2; read as storing a headroom value) capable of receiving data at higher rates before

mobile-telephones capable of receiving data at lower data rates. The data is then

transmitted (step 170 of figure 2))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Gopalakrishnan et al into the teachings of Corazza to integrate voice and data services onto a same frequency channel

using available transmit power information to determine data rates.

Consider claim 22, Corazza discloses a base station for use in a wireless communication network comprising: transceiver circuits to communicate with a plurality of mobile stations via wireless signaling (abstract; figure 5; col. 4, lines 43-50); one or more processing circuits to control communications with the plurality of mobile stations (figure 5; col. 13, lines 40-52); said one or more processing circuits including a headroom tracking circuit configured to track transmit power headroom for a mobile station by: periodically receiving a full report from a mobile station that indicates a transmit power headroom of the mobile station (abstract; col. 3, lines 30-41; col. 4, lines 12-16; Transmit power headroom is exchanged between the network and the subscribers); and tracking changes in transmit power headroom between each full report using reverse link power

Art Unit: 2618

control information associated with the mobile station (abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18; Each subscriber station selects a data rate based on the amount of data queued for transmission and adjusts this rate based on the available power headroom).

Corazza fails to specifically disclose updating a headroom value maintained at the base station for the mobile station responsive to receiving each full report.

In related art, Gopalakrishnan et al disclose updating a headroom value (abstract; read as available transmit power) maintained at the base station for the mobile station responsive to receiving each full report. (abstract; figure 2; col. 5, 10-42; col. 6, lines 54-67; The data rate is transmitted to the base station (step 150 of figure 1) wherein the base station schedules time-slotted data transmissions to mobile-telephones (step 160 of figure 2; read as storing a headroom value) capable of receiving data at higher rates before mobile-telephones capable of receiving data at lower data rates. The data is then transmitted (step 170 of figure 2))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Gopalakrishnan et al into the teachings of Corazza to integrate voice and data services onto a same frequency channel using available transmit power information to determine data rates.

Consider claim 2, and as applied to claim 1 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein receiving a power headroom report from a mobile station comprises receiving periodic power headroom reports from the mobile station (Gopalakrishnan et al: col. 5, lines 11-27).

Art Unit: 2618

Consider claim 3, and as applied to claim 2 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein storing a headroom value for the mobile station based on the power headroom report received from the mobile station comprises setting the stored headroom value to a received headroom value in each periodic power headroom report. (Gopalakrishnan et al: abstract; figure 2; col. 5, 10-42; col. 6, lines 54-67)

Consider claim 4, and as applied to claim 1 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein updating the headroom value to track changes in a transmit power of the mobile station based on reverse link power control information associated with the mobile station comprises incrementing and decrementing the headroom value based on reverse link power control commands being transmitted to the mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 5, and as applied to claim 4 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein decrementing the headroom value responsive to transmitting an up power command to the mobile station; and incrementing the headroom value responsive to transmitting a down power command. (Corazza: col. 8, line 42 to col. 10, line 18)

Art Unit: 2618

Gopalakrishnan et al, discloses the claimed invention wherein receiving power

Consider claim 6, and as applied to claim 1 above, Corazza, as modified by

adjustment feedback from the mobile station indicative of its ongoing reverse link

transmit power adjustments, and updating the headroom value based on the power

adjustment feedback. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines

12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 7, and as applied to claim 6 above, Corazza, as modified by

Gopalakrishnan et al, discloses the claimed invention wherein receiving power control

decisions from the mobile station that indicate whether the mobile station increased or

decreased its transmit power in a given power control interval. (Corazza: col. 8, line 42 to

col. 10, line 18)

Consider claim 8, and as applied to claim 1 above, Corazza, as modified by

Gopalakrishnan et al. discloses the claimed invention wherein determining whether to

grant an increased reverse link data rate to the mobile station based on the headroom

value. (Corazza: col. 8, line 42 to col. 10, line 18)

Consider claim 9, and as applied to claim 1 above, Corazza, as modified by

Gopalakrishnan et al, discloses the claimed invention wherein determining whether to

select the mobile station for a reverse link rate adjustment based on the headroom value.

(Corazza: col. 8, line 42 to col. 10, line 18)

Art Unit: 2618

Consider claim 10, and as applied to claim 1 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the mobile station comprises one in a plurality of mobile stations being supported by the base station, and further comprising receiving power headroom reports from the plurality of mobile stations, storing headroom values for the plurality of mobile stations, and updating the headroom value for each mobile station based on reverse link power control information associated with each mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18; Gopalakrishnan et al : abstract; figure 2; col. 5, 10-42; col. 6, lines 54-67).

Consider claim 12, and as applied to claim 11 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein periodically receiving one or more bits in a Packet Data Unit (PDU) header. (Gopalakrishnan et al: col. 5, lines 11-27)

Consider claim 13, and as applied to claim 12 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein receiving a full report from the mobile station every N reverse link transmit frames, where N is an integer number greater than zero. (Corazza: abstract; col. 3, lines 30-41; col. 4, lines 12-16)

Consider claim 14, and as applied to claim 11 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein receiving one or more differential reports from the mobile station during intervals between the full reports.

Art Unit: 2618

(Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 15, and as applied to claim 11 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein tracking changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station comprises receiving one or more bits at each reverse link power control decision point indicating whether the mobile station incrementally increased or decreased its reverse link transmit power at that decision point. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 16, and as applied to claim 15 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein incrementally adjusting the headroom value up or down according to the differential reports being received from the mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 17, and as applied to claim 11 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein determining whether to select the mobile station for a reverse link rate increase based on whether the headroom value maintained at the base station for the mobile station indicates that the mobile

Art Unit: 2618

station has sufficient transmit power headroom to support a contemplated higher rate.

(Corazza: col. 8, line 42 to col. 10, line 18)

Consider claim 18, and as applied to claim 11 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein tracking changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station comprising incrementally adjusting the headroom value for the mobile station based on reverse link power control commands being transmitted to the mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 19, and as applied to claim 11 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein tracking changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station comprises receiving one or more differential reports from the mobile station between the full reports, wherein the differential reports indicate incremental adjustments in transmit power being made by the mobile station responsive to reverse link power control commands received by the mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 20, and as applied to claim 19 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the mobile station

Art Unit: 2618

comprises one in a plurality of mobile stations, and further comprising maintaining headroom values for the plurality of mobile stations responsive to receiving full and differential reports from each mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18; Gopalakrishnan et al: abstract; figure 2; col. 5, 10-42; col. 6, lines 54-67)

Consider claim 21, and as applied to claim 20 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein using the headroom values maintained for the plurality of mobile stations to determine whether particular ones of the mobile stations are candidates for reverse link rate increases. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 23, and as applied to claim 22 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit is configured to periodically receive one or more bits in a Packet Data Unit (PDU) header as the full report. (Gopalakrishnan et al: col. 5, lines 11-27)

Consider claim 24, and as applied to claim 23 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit is configured to receive a full report from the mobile station every N reverse link transmit frames, where N is an integer number greater than zero. (Corazza: abstract; col. 3, lines 30-41; col. 4, lines 12-16)

Art Unit: 2618

Consider claim 25, and as applied to claim 22 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit is configured to track changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station by receiving one or more differential reports from the mobile station during intervals between the full reports. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 26, and as applied to claim 22 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit is configured to track changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station by receiving one or more bits at each reverse link power control decision point indicating whether the mobile station incrementally increased or decreased its reverse link transmit power at that decision point. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 27, and as applied to claim 26 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit is configured to track changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station further by incrementally adjusting the headroom value up or down according to the

Art Unit: 2618

differential reports being received from the mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 28, and as applied to claim 22 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the base station is configured to determine whether to select the mobile station for a reverse link rate increase based on whether the headroom value maintained for the mobile station indicates that the mobile station has sufficient transmit power headroom to support a contemplated higher rate. (Corazza: col. 8, line 42 to col. 10, line 18)

Consider claim 29, and as applied to claim 22 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit tracks changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station by incrementally adjusting the headroom value for the mobile station based on reverse link power control commands transmitted to the mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 30, and as applied to claim 22 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit tracks changes in transmit power headroom between each full report using reverse link power control information associated with the mobile station by receiving one or

Art Unit: 2618

more differential reports from the mobile station between the full reports, wherein the differential reports indicate incremental adjustments in transmit power being made by the mobile station responsive to reverse link power control commands received by the mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 31, and as applied to claim 30 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the headroom tracking circuit is configured to maintain headroom values for the plurality of mobile stations responsive to receiving full and differential reports from each mobile station. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Consider claim 32, and as applied to claim 31 above, Corazza, as modified by Gopalakrishnan et al, discloses the claimed invention wherein the base station is configured to use the headroom values maintained for the plurality of mobile stations to determine whether particular ones of the mobile stations are candidates for reverse link rate increases. (Corazza: abstract; figures 1A-1F; col. 3, lines 30-41; col. 4, lines 12-16; col. 6, lines 30-51; col. 8, line 42 to col. 10, line 18)

Art Unit: 2618

Conclusion

Any response to this Office Action should be faxed to (571) 273-8300 or mailed to:

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bobbak Safaipour whose telephone number is (571) 270-1092. The Examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

Art Unit: 2618

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Bobbak Soffaip

May 24, 2007

EDAN ORGAD
PRIMARY PATENT EXAMINER